B. In the claims:

Please amend the claims as follows:

1. (currently amended) A process for making an ~~An~~ electrical device, the process including the steps of:

~~a base;~~

~~a conductive layer adjacent to the base;~~

~~a dielectric material adjacent to conductive layer;~~

~~a tooth structure including a metal layer set in the dielectric material, but not set in the conductive layer, to join the dielectric material to the metal layer; and~~

~~wherein the metal layer forms a portion of multiple layers of circuitry in an electrical device.~~

producing a dielectric material having cavities remaining from removing a portion of the dielectric material; and

building up a conductive layer on the dielectric material to fill the cavities so as to set in and under the dielectric material and form a portion of circuitry of the electrical device.

2. (currently amended) The process of claim 1, wherein the removing of the portion is sufficient to produce a surface gloss measurement at an angle of 60 degrees of less than 10%. ~~A method of making the electrical device of claim 1, the method comprising the following steps:~~

~~providing a base;~~

~~adding a conductive layer to the base;~~

~~applying a dielectric material to the conductive layer;~~

~~forming cavities in the applied dielectrical material;~~

~~applying a conductive coating to the cavities in the dielectrical material;~~

~~forming a metal layer on the conductive coating to produce a tooth structure set in the dielectric coating but not set in the conductive layer;~~

~~forming openings in the dielectric coating; and~~

~~forming circuitry through a multilayer electrical device.~~

3. (currently amended) The process of claim 1, wherein the step of building up the conductive layer to fill the cavities includes forming teeth. ~~The method of claim 2, wherein the step of applying a dielectrical material and the step of forming a metal layer are carried out to produce a peel strength greater than the peel strength than that of a single desmear process.~~

4. (currently amended) The process of claim 1, wherein the step of building up the conductive layer includes building up the conductive layer to produce a dielectric surface contact area greater than a dielectric surface contact area that would be produced by a single pass roughening. ~~The method of claim 2, wherein the step of adding a conductive layer to the base is carried out by an oxide process.~~

5. (currently amended) The process of claim 1, wherein the step of building up the conductive layer includes building up the conductive layer to produce a peel strength greater than a peel strength that would be produced by a single desmear process. ~~The method of claim 2, wherein the step of adding a conductive layer to the base is carried out by an oxide replacement process.~~

6. (currently amended) The process of claim 1, wherein the step of building

up the conductive layer includes building up the conductive layer sufficiently that separation requires destroying integrity of at least one of the conductive layer and the dielectric material.

~~The method of claim 2, wherein:~~

~~the step of applying a conductive coating is carried out by direct plating on the dielectrical material.~~

7. (currently amended) A process of making an electrical device, the process including the steps of:

producing a dielectric material having cavities remaining from removing a portion of the dielectric material; and

building up a conductive layer on the dielectric material to fill the cavities to form a surface of substantially angular teeth set in the dielectric material and form a portion of circuitry of the electrical device.

~~The method of claim 2, wherein the step of forming is carried out by a double desmear process.~~

8. (currently amended) The process of claim 7, wherein the removing of the portion is sufficient to produce a surface gloss measurement at an angle of 60 degrees of less than 10%. ~~An electrical device made by the process of claim 2.~~

9. (new) The process of claim 7, wherein the step of building up the conductive layer includes building up the conductive layer to produce a dielectric surface contact area greater than a dielectric surface contact area that would be produced by a single pass roughening.

10. (new) The process of claim 7, wherein the step of building up the conductive layer includes building up the conductive layer to produce a peel strength greater than a peel strength that would be produced by a single desmear process.

11. (new) The process of claim 7, wherein the step of building up the conductive layer includes building up the conductive layer sufficiently that separation requires destroying integrity of at least one of the conductive layer and the dielectric material.

12. (new) A process of making an electrical device, the process including the step of:

building up a conductive layer of material on a layer of dielectric material, the layers joined in a saw-tooth manner made of both materials in an interlocking bite to form a portion of circuitry of the electrical device.

13. (new) The process of claim 12, wherein the step of building up the conductive layer includes forming teeth.

14. (new) The process of claim 12, wherein, prior to the step of building up, the layer of the dielectric material has a surface gloss measurement at an angle of 60 degrees of less than 10%.

15. (new) The process of claim 12, wherein the step of building up the conductive layer includes building up the conductive layer to produce a dielectric surface contact area greater than a dielectric surface contact area that would be produced by a single pass roughening.

16. (new) The process of claim 12, wherein the step of building up the conductive layer includes building up the conductive layer to produce a peel strength greater than a peel strength that would be produced by a single desmear process.

17. (new) The process of claim 12, wherein the step of building up the conductive layer includes building up the conductive layer sufficiently that separation requires destroying integrity of at least one of the conductive layer and the dielectric material.

18. (new) A process of making an electrical device, the process including the step of:

building up a conductive layer to fill undercuttings in a dielectric material and form a portion of circuitry of the electrical device.

19. (new) The process of claim 18, wherein the step of building up the conductive layer to fill the undercuttings includes forming teeth.

20. (new) A process of making an electrical device, the process including the steps of:

producing a dielectric material with cavities remaining after removing an other portion of the dielectric material sufficient to produce a surface gloss measurement at an angle of 60 degrees of less than 10%; and

building up conductive layer to fill the cavities and form electrical device circuitry.

21. (new) The process of claim 20, wherein the step of building up the

conductive layer includes forming teeth.

22. (new) The process of claim 20, wherein the step of building up the conductive layer includes building up the conductive layer to produce a dielectric surface contact area greater than a dielectric surface contact area that would be produced by a single pass roughening.

23. (new) The process of claim 20, wherein the step of building up the conductive layer includes building up the conductive layer to produce a peel strength greater than a peel strength that would be produced by a single desmear process.

24. (new) The process of claim 20, wherein the step of building up the conductive layer includes building up the conductive layer sufficiently that separation requires destroying integrity of at least one of the conductive layer and the dielectric material.

25. (new) A process for making an electrical device, the process including the step of:

forming electrical device circuitry by building up a conductive layer on a dielectric material at a dielectric surface area greater than a dielectric surface area that would be produced by a single pass roughening.

26. (new) The process of claim 25, wherein the step of building up the conductive layer includes forming teeth.

27. (new) The process of claim 25, wherein the step of building up the

conductive layer includes building up the conductive layer to produce a peel strength greater than a peel strength that would be produced by a single desmear process.

28. (new) The process of claim 25, wherein the step of building the conductive layer includes building up the conductive layer sufficiently that separation requires destroying integrity of at least one of the conductive layer and the dielectric material.

29. (new) A process of making an electrical device, the process including the step of:

combining a dielectric material with a conductive layer to form a portion of circuitry of the electrical device, said combining being carried out with means for joining the conductive layer to the dielectric material, the means including teeth built up on the dielectric material and angled sufficiently for mechanically gripping the dielectric material in three dimensions.

30. (new) A process for making an electrical device, the process including the step of:

combining a dielectric material with means for joining a conductive layer built up on the dielectric material to produce a peel strength greater than a peel strength that would be produced by a single desmear process, the conductive layer forming a portion of circuitry.

31. (new) The process of claim 30, wherein the step of combining is carried out with the means for joining comprised of teeth.

32. (new) A process of making an electrical device, the process including

the step of:

forming electrical device circuitry by building up a conductive layer on a surface of dielectric material to produce a peel strength greater than a peel strength that would be produced by a single desmear process.

33. (new) The process of claim 32, wherein the step of building up the conductive layer includes forming teeth.

34. (new) The process of claim 32, wherein the step of building up the conductive layer includes building up the conductive layer sufficiently that separation requires destroying integrity of at least one of the conductive layer and the dielectric material.

35. (new) A process for making an electrical device, the process including the steps of:

producing a dielectric material surface remaining from removing a portion of the dielectric material; and

applying means for mechanically gripping a conductive layer to the surface of the dielectric material so that a conductive layer is borrowed in and under the dielectric material, wherein the conductive layer forms a portion of circuitry of the electrical device.

36. (new) The process of claim 35, wherein the step of applying is carried out with the means for mechanically gripping comprising teeth.

37. (new) A process of making an electrical device, the process including the step of:

forming electrical device circuitry by building up a conductive layer on a dielectric material sufficiently that separation requires destroying integrity of the conductive layer and of the dielectric material.

38. (new) The process of claim 37, wherein the step of building up the conductive layer includes forming teeth.

39. (new) A process for making an electrical device, the process including the step of:

building up a conductive layer on a dielectric material having a surface gloss measurement at an angle of 60 degrees of less than 10% to form circuitry of the electrical device.

40. (new) The process of claim 39, wherein the step of building up the conductive layer includes producing teeth.

41. (new) The process of claim 39, wherein the step of building up the conductive layer includes building up the conductive layer sufficiently that separation requires destroying integrity of the conductive layer.

42. (new) The process of claim 39, wherein the step of building up the conductive layer includes building up the conductive layer sufficiently that separation requires destroying integrity of the dielectric material.

43. (new) The process of claim 39, wherein the step of building up the

conductive layer includes building up the conductive layer sufficiently that separation requires destroying integrity of the conductive material and the dielectric material.

44. (new) A process of making an electrical device, the process including the step of:

combining a dielectric material with means for joining a conductive layer built up on the dielectric material at a dielectric surface contact area greater than a dielectric surface contact area that would be produced by a single pass roughening, the conductive layer forming a portion of circuitry.

45. (new) The process of claim 44, wherein the step of combining is carried out with the means for joining comprised of teeth.

46. (new) A process for making an electrical device, the process including the step of:

combining a dielectric material with means for joining a conductive layer built up on the dielectric material sufficiently that separation requires destroying integrity of at least one of the conductive layer and the dielectric material, said means for joining comprising filled cavities that form a portion of circuitry of the electrical device.

47. (new) The process of claim 44, wherein the step of combining is carried out with the filled cavities comprising teeth.

48. (new) The process of any one of claims 3, 7, 13, 19, 21, 26, 29, 31, 33, 36, 38, 45, or 47 wherein:

a sample of the circuitry has at least 5,000 said teeth per linear inch.

49. (new) The process of any one of claims 3, 7, 13, 19, 21, 26, 29, 31, 33, 36, 38, 45, or 47 wherein:

a sample of the circuitry has at least 10,000 said teeth per linear inch.

50. (new) The process of any one of claims 3, 7, 13, 19, 21, 26, 29, 31, 33, 36, 38, 45, or 47 wherein:

a sample of the circuitry has at least 15,000 said teeth per linear inch.

51. (new) The process of any one of claims 3, 7, 13, 19, 21, 26, 29, 31, 33, 36, 38, 45, or 47 wherein:

a sample of the circuitry has at least 25,000 said teeth per square inch.

52. (new) The process of any one of claims 3, 7, 13, 19, 21, 26, 29, 31, 33, 36, 38, 45, or 47 wherein:

a sample of the circuitry has at least 100,000 said teeth per square inch.

53. (new) The process of any one of claims 3, 7, 13, 19, 21, 26, 29, 31, 33, 36, 38, 45, or 47 wherein:

a sample of the circuitry has at least 200,000 said teeth per square inch.

54. (new) The process of any one of claims 3, 7, 13, 19, 21, 26, 29, 31, 33, 36, 38, 45, or 47 wherein:

a sample of the circuitry has at least 20% of the teeth have a shape that

mechanically grips the dielectric material.

55. (new) The process of any one of claims 3, 7, 13, 19, 21, 26, 29, 31, 33, 36, 38, 45, or 47 wherein:

a sample of the circuitry has at least 50% of the teeth that are obtuse shaped.

56. (new) The process of any one of claims 3, 7, 13, 19, 21, 26, 29, 31, 33, 36, 38, 45, or 47 wherein:

a sample of the circuitry has at least 20% of the teeth that are within the range of at least 1 tenth of a mil deep.

57. (new) The process of any one of claims 3, 7, 13, 19, 21, 26, 29, 31, 33, 36, 38, 45, or 47 wherein:

a sample of the circuitry has at least 50% of the teeth that are within the range of at least 1 tenth of a mil deep.

58. (new) The process of any one of claims 3, 7, 13, 19, 21, 26, 29, 31, 33, 36, 38, 45, or 47 wherein:

a sample of the circuitry has at least 20% of the teeth that are within the range of 1 tenth of a mil deep to 2 tenths of a mil deep.

59. (new) The process of any one of claims 3, 7, 13, 19, 21, 26, 29, 31, 33, 36, 38, 45, or 47 wherein:

a sample of the circuitry has at least 50% of the teeth that are within the range of 1 tenth of a mil deep to 2 tenths of a mil deep.

60. (new) The process of any one of claims 3, 7, 13, 19, 21, 26, 29, 31, 33, 36, 38, 45, or 47 wherein:

a sample of the circuitry has at least 20% of the teeth that are in the range of 1.5 tenths of a mil deep to 1.75 tenths of a mil deep.

61. (new) The process of any one of claims 3, 7, 13, 19, 21, 26, 29, 31, 33, 36, 38, 45, or 47 wherein:

a sample of the circuitry has at least 50% of the teeth that are in the range of 1.5 tenths of a mil deep to 1.75 tenths of a mil deep.

62. (new) The process of claim 48, further including the step of configuring the circuitry of the electrical device as multi-layer circuitry, one of said multi-layers having said teeth and another of said layers having corresponding teeth.

63. (new) The process of claim 49, further including the step of configuring the circuitry of the electrical device as multi-layer circuitry, one of said multi-layers having said teeth and another of said layers having corresponding teeth.

64. (new) The process of claim 50, further including the step of configuring the circuitry of the electrical device as multi-layer circuitry, one of said multi-layers having said teeth and another of said layers having corresponding teeth.

65. (new) The process of claim 51, further including the step of configuring the circuitry of the electrical device as multi-layer circuitry, one of said multi-layers having said

teeth and another of said layers having corresponding teeth.

66. (new) The process of claim 52, further including the step of configuring the circuitry of the electrical device as multi-layer circuitry, one of said multi-layers having said teeth and another of said layers having corresponding teeth.

67. (new) The process of claim 53, further including the step of configuring the circuitry of the electrical device as multi-layer circuitry, one of said multi-layers having said teeth and another of said layers having corresponding teeth.

68. (new) The process of claim 54, further including the step of configuring the circuitry of the electrical device as multi-layer circuitry, one of said multi-layers having said teeth and another of said layers having corresponding teeth.

69. (new) The process of claim 55, further including the step of configuring the circuitry of the electrical device as multi-layer circuitry, one of said multi-layers having said teeth and another of said layers having corresponding teeth.

70. (new) The process of claim 56, further including the step of configuring the circuitry of the electrical device as multi-layer circuitry, one of said multi-layers having said teeth and another of said layers having corresponding teeth.

71. (new) The process of claim 57, further including the step of configuring the circuitry of the electrical device as multi-layer circuitry, one of said multi-layers having said teeth and another of said layers having corresponding teeth.

72. (new) The process of claim 58, further including the step of configuring the circuitry of the electrical device as multi-layer circuitry, one of said multi-layers having said teeth and another of said layers having corresponding teeth.

73. (new) The process claim 59, further including the step of configuring the circuitry of the electrical device as multi-layer circuitry, one of said multi-layers having said teeth and another of said layers having corresponding teeth.

74. (new) The process of claim 60, further including the step of configuring the circuitry of the electrical device as multi-layer circuitry, one of said multi-layers having said teeth and another of said layers having corresponding teeth.

75. (new) The process of claim 61, further including the step of configuring the circuitry of the electrical device as multi-layer circuitry, one of said multi-layers having said teeth and another of said layers having corresponding teeth.

76. (new) The process of claim 48, further including the step of configuring the circuitry as of double sided circuitry, one side having said teeth and another side having corresponding teeth.

77. (new) The process of claim 49, further including the step of configuring the circuitry as double sided circuitry, one side having said teeth and another side having corresponding teeth.

78. (new) The process of claim 50, further including the step of configuring the circuitry as double sided circuitry, one side having said teeth and another side having corresponding teeth.

79. (new) The process of claim 51, further including the step of configuring the circuitry as double sided circuitry, one side having said teeth and another side having corresponding teeth.

80. (new) The process of claim 52, further including the step of configuring the circuitry as double sided circuitry, one side having said teeth and another side having corresponding teeth.

81. (new) The process of claim 53, further including the step of configuring the circuitry as double sided circuitry, one side having said teeth and another side having corresponding teeth.

82. (new) The process of claim 54, further including the step of configuring the circuitry as double sided circuitry, one side having said teeth and another side having corresponding teeth.

83. (new) The process of claim 55, further including the step of configuring the circuitry as double sided circuitry, one side having said teeth and another side having corresponding teeth.

84. (new) The process of claim 56, further including the step of configuring

the circuitry as double sided circuitry, one side having said teeth and another side having corresponding teeth.

85. (new) The process of claim 57, further including the step of configuring the circuitry as double sided circuitry, one side having said teeth and another side having corresponding teeth.

86. (new) The process of claim 58, further including the step of configuring the circuitry as double sided circuitry, one side having said teeth and another side having corresponding teeth.

87. (new) The process of claim 59, further including the step of configuring the circuitry as double sided circuitry, one side having said teeth and another side having corresponding teeth.

88. (new) The process of claim 60, further including the step of configuring the circuitry as double sided circuitry, one side having said teeth and another side having corresponding teeth.

89. (new) The process of claim 61, further including the step of configuring the circuitry as double sided circuitry, one side having said teeth and another side having corresponding teeth.

90. (new) A product produced by the process of any one of claims 1, 7, 12, 18, 20, 25, 29, 30, 35, 32, 37, 44, or 46.

91. (new) An electrical device including:

a dielectric material having cavities remaining from removal of a portion of the dielectric material;

a conductive layer built up on the dielectric material to fill the cavities so as to set in and under the dielectric material; and wherein

the conductive layer is a portion of circuitry of the electrical device.

92. (new) The device of claim 91, wherein the removal of the portion is sufficient to produce a surface gloss measurement at an angle of 60 degrees of less than 10%.

93. (new) The device of claim 91, wherein the conductive layer built up to fill the cavities is comprised of teeth.

94. (new) The device of claim 91, wherein the conductive layer has a dielectric surface contact area greater than a dielectric surface contact area that would be produced by a single pass roughening.

95. (new) The device of claim 91, wherein the conductive layer is built up to fill in the cavities sufficient for a peel strength greater than a peel strength that would be produced by a single desmear process.

96. (new) The device of claim 91, wherein the conductive layer is built up to fill in the cavities sufficiently that separation requires destroying integrity of at least one of the conductive layer and the portion of the dielectric material.

97. (new) An electrical device including:

a dielectric material having cavities remaining from removal of a portion of the dielectric material;

a conductive layer built up on the dielectric material to fill the cavities to form a surface of substantially angular teeth set in the dielectric material; and wherein

the conductive layer is a portion of circuitry of the electrical device.

98. (new) The device of claim 97, wherein the removal of the portion is sufficient to produce a surface gloss measurement at an angle of 60 degrees of less than 10%.

99. (new) The device of claim 97, wherein the conductive layer has a dielectric surface contact area greater than a dielectric surface contact area that would be produced by a single pass roughening.

100. (new) The device of claim 97, wherein the conductive layer is built up to fill in the cavities sufficient to produce a peel strength greater than a peel strength that would be produced by a single desmear process.

101. (new) The device of claim 97, wherein the conductive layer is built up sufficiently that separation requires destroying integrity of at least one of the conductive layer and the dielectric material.

102. (new) An electrical device including:

a conductive layer of material built up on a layer of a dielectric material, the

layers joined in a saw-tooth manner made of both materials in an interlocking bite; wherein the conductive layer is a portion of circuitry of the electrical device.

103. (new) The device of claim 102, wherein the conductive layer is comprised of teeth.

104. (new) The device of claim 102, wherein the dielectric material has a surface gloss measurement at an angle of 60 degrees of less than 10% prior to the conductive layer of material being built up thereon.

105. (new) The device of claim 102, wherein the conductive layer has a dielectric surface contact area greater than a dielectric surface contact area that would be produced by a single pass roughening.

106. (new) The device of claim 102, wherein the conductive layer is built up sufficient to produce a peel strength greater than a peel strength that would be produced by a single desmear process.

107. (new) The device of claim 102, wherein the conductive layer is built up sufficiently that separation requires destroying integrity of at least one of the conductive layer and the dielectric material.

108. (new) An electrical device including:

a conductive layer having a surface built up to fill undercuttings in a dielectric

material, wherein

the conductive layer is a portion of circuitry of the electrical device.

109. (new) The device of claim 108, wherein the conductive layer built up to fill the undercuttings is comprised of teeth.

110. (new) An electrical device including:

a dielectric material with cavities remaining after removal of a portion of the dielectric material sufficient to produce a surface gloss measurement at an angle of 60 degrees of less than 10%; and

electrical device circuitry comprised of a conductive layer built up to fill the cavities.

111. (new) The device of claim 110, wherein the conductive layer built up to fill the cavities is comprised of teeth.

112. (new) The device of claim 110, wherein the conductive layer has a dielectric surface contact area greater than a dielectric surface contact area that would be produced by a single pass roughening.

113. (new) The device of claim 110, wherein the conductive layer is built up to fill in the cavities sufficient to produce a peel strength greater than a peel strength that would be produced by a single desmear process.

114. (new) The device of claim 110, wherein the conductive layer is built up

sufficiently that separation requires destroying integrity of at least one of the conductive layer and the dielectric material.

115. (new) An electrical device including:

a dielectric material; and

electrical device circuitry comprising a conductive layer built up on the dielectric material at a dielectric surface area greater than a dielectric surface area that would be produced by a single pass roughening.

116. (new) The device of claim 115, wherein the conductive layer built up on the dielectric material is comprised of teeth.

117. (new) The device of claim 115, wherein the conductive layer is built up sufficient to produce a peel strength greater than a peel strength that would be produced by a single desmear process.

118. (new) The device of claim 115, wherein the conductive layer is built up sufficiently that separation requires destroying integrity of at least one of the conductive layer and the dielectric material.

119. (new) An electrical device including:

a dielectric material;

a conductive layer forming a portion of circuitry of the electrical device; and

means for joining the conductive layer to the dielectric material, the means including teeth built up on the dielectric material and angled sufficiently for mechanically

gripping the dielectric material in three dimensions.

120. (new) An electrical device including:

a dielectric material; and

means for joining a conductive layer built up on the dielectric material to produce a peel strength greater than a peel strength that would be produced by a single desmear process, wherein the conductive layer is a portion of circuitry.

121. (new) The device of claim 120, wherein the means for joining is comprised of teeth.

122. (new) An electrical device including:

a dielectric material; and

electrical device circuitry comprising a conductive layer built up on a surface of the dielectric material to produce a peel strength greater than a peel strength that would be produced by a single desmear process.

123. (new) The device of claim 122, wherein the conductive layer built up on the surface is comprised of teeth.

124. (new) The device of claim 122, wherein the conductive layer is built up sufficiently that separation requires destroying integrity of at least one of the conductive layer and the dielectric material.

125. (new) An electrical device including:

a dielectric material having a surface remaining from removal of a portion of the dielectric material; and

means for mechanically gripping a conductive layer to the surface of the dielectric material so that the conductive layer is borrowed in and under the dielectric material, wherein the conductive layer forms a portion of circuitry of the electrical device.

126. (new) The device of claim 125, wherein the means for mechanically gripping is comprised of teeth.

127. (new) An electrical device including:

a dielectric material; and

electrical device circuitry comprising a conductive layer built up on the dielectric material sufficiently that separation requires destroying integrity of the conductive layer and of the dielectric material.

128. (new) The device of claim 127, wherein the conductive layer is comprised of teeth.

129. (new) An electrical device including:

a dielectric material having a surface gloss measurement at an angle of 60 degrees of less than 10%; and

circuitry of the electrical device comprised of a conductive layer on the dielectric material.

130. (new) The device of claim 129, wherein the conductive layer is comprised of teeth.

131. (new) The device of claim 129, wherein the conductive layer is built up on the dielectric material sufficiently that separation requires destroying integrity of the conductive layer.

132. (new) The device of claim 129, wherein the conductive layer is built up on the dielectric material sufficiently that separation requires destroying integrity of the dielectric material.

133. (new) The device of claim 129, wherein the conductive layer is built up on the dielectric material sufficiently that separation requires destroying integrity of the conductive material and the dielectric material.

134. (new) An electrical device including:

a dielectric material; and

means for joining a conductive layer built up on the dielectric material at a dielectric surface contact area greater than a dielectric surface contact area that would be produced by a single pass roughening, wherein the conductive layer is a portion of circuitry of the electrical device.

135. (new) The device of claim 134, wherein the means for joining is comprised of teeth.

136. (new) An electrical device including:

a dielectric material; and

means for joining a conductive layer built up on the dielectric material sufficiently that separation requires destroying integrity of at least one of the conductive layer and the dielectric material, said means for joining comprising filled cavities that form a portion of circuitry of the electrical device.

137. (new) The device of claim 134, wherein the filled cavities comprises teeth.

138. (new) The device of any one of claims 93, 97, 103, 109, 111, 116, 119, 121, 123, 126, 128, 135, or 137 wherein:

a sample of the circuitry has at least 5,000 said teeth per linear inch.

139. (new) The device of any one of claims 93, 97, 103, 109, 111, 116, 119, 121, 123, 126, 128, 135, or 137 wherein:

a sample of the circuitry has at least 10,000 said teeth per linear inch.

140. (new) The device of any one of claims 93, 97, 103, 109, 111, 116, 119, 121, 123, 126, 128, 135, or 137 wherein:

a sample of the circuitry has at least 15,000 said teeth per linear inch.

141. (new) The device of any one of claims 93, 97, 103, 109, 111, 116, 119, 121, 123, 126, 128, 135, or 137 wherein:

a sample of the circuitry has at least 25,000 said teeth per square inch.

142. (new) The device of any one of claims 93, 97, 103, 109, 111, 116, 119, 121, 123, 126, 128, 135, or 137 wherein:

a sample of the circuitry has at least 100,000 said teeth per square inch.

143. (new) The device of any one of claims 93, 97, 103, 109, 111, 116, 119, 121, 123, 126, 128, 135, or 137 wherein:

a sample of the circuitry has at least 200,000 said teeth per square inch.

144. (new) The device of any one of claims 93, 97, 103, 109, 111, 116, 119, 121, 123, 126, 128, 135, or 137 wherein:

a sample of the circuitry has at least 20% of the teeth have a shape that mechanically grips the dielectric material.

145. (new) The device of any one of claims 93, 97, 103, 109, 111, 116, 119, 121, 123, 126, 128, 135, or 137 wherein:

a sample of the circuitry has at least 50% of the teeth that are obtuse shaped.

146. (new) The device of any one of claims 93, 97, 103, 109, 111, 116, 119, 121, 123, 126, 128, 135, or 137 wherein:

a sample of the circuitry has at least 20% of the teeth that are within the range of at least 1 tenth of a mil deep.

147. (new) The device of any one of claims 93, 97, 103, 109, 111, 116, 119, 121, 123, 126, 128, 135, or 137 wherein:

a sample of the circuitry has at least 50% of the teeth that are within the range of at least 1 tenth of a mil deep.

148. (new) The device of any one of claims 93, 97, 103, 109, 111, 116, 119, 121, 123, 126, 128, 135, or 137 wherein:

a sample of the circuitry has at least 20% of the teeth that are within the range of 1 tenth of a mil deep to 2 tenths of a mil deep.

149. (new) The device of any one of claims 93, 97, 103, 109, 111, 116, 119, 121, 123, 126, 128, 135, or 137 wherein:

a sample of the circuitry has at least 50% of the teeth that are within the range of 1 tenth of a mil deep to 2 tenths of a mil deep.

150. (new) The device of any one of claims 93, 97, 103, 109, 111, 116, 119, 121, 123, 126, 128, 135, or 137 wherein:

a sample of the circuitry has at least 20% of the teeth that are in the range of 1.5 tenths of a mil deep to 1.75 tenths of a mil deep.

151. (new) The device of any one of claims 93, 97, 103, 109, 111, 116, 119, 121, 123, 126, 128, 135, or 137 wherein:

a sample of the circuitry has at least 50% of the teeth that are in the range of 1.5 tenths of a mil deep to 1.75 tenths of a mil deep.

152. (new) The device of claim 138, wherein the circuitry of the electrical device is comprised of multi-layer circuitry, one of said multi-layers having said teeth and

another of said layers having corresponding teeth.

153. (new) The device of claim 139, wherein the circuitry of the electrical device is comprised of multi-layer circuitry, one of said multi-layers having said teeth and another of said layers having corresponding teeth.

154. (new) The device of claim 140, wherein the circuitry of the electrical device is comprised of multi-layer circuitry, one of said multi-layers having said teeth and another of said layers having corresponding teeth.

155. (new) The device of claim 141, wherein the circuitry of the electrical device is comprised of multi-layer circuitry, one of said multi-layers having said teeth and another of said layers having corresponding teeth.

156. (new) The device of claim 142, wherein the circuitry of the electrical device is comprised of multi-layer circuitry, one of said multi-layers having said teeth and another of said layers having corresponding teeth.

157. (new) The device of claim 143, wherein the circuitry of the electrical device is comprised of multi-layer circuitry, one of said multi-layers having said teeth and another of said layers having corresponding teeth.

158. (new) The device of claim 144, wherein the circuitry of the electrical device is comprised of multi-layer circuitry, one of said multi-layers having said teeth and another of said layers having corresponding teeth.

159. (new) The device of claim 145, wherein the circuitry of the electrical device is comprised of multi-layer circuitry, one of said multi-layers having said teeth and another of said layers having corresponding teeth.

160. (new) The device of claim 146, wherein the circuitry of the electrical device is comprised of multi-layer circuitry, one of said multi-layers having said teeth and another of said layers having corresponding teeth.

161. (new) The device of claim 147, wherein the circuitry of the electrical device is comprised of multi-layer circuitry, one of said multi-layers having said teeth and another of said layers having corresponding teeth.

162. (new) The device of claim 148, wherein the circuitry of the electrical device is comprised of multi-layer circuitry, one of said multi-layers having said teeth and another of said layers having corresponding teeth.

163. (new) The device of claim 149, wherein the circuitry of the electrical device is comprised of multi-layer circuitry, one of said multi-layers having said teeth and another of said layers having corresponding teeth.

164. (new) The device of claim 150, wherein the circuitry of the electrical device is comprised of multi-layer circuitry, one of said multi-layers having said teeth and another of said layers having corresponding teeth.

165. (new) The device of claim 151, wherein the circuitry of the electrical device is comprised of multi-layer circuitry, one of said multi-layers having said teeth and another of said layers having corresponding teeth.

166. (new) The device of claim 138, wherein the circuitry is comprised of double sided circuitry, one side having said teeth and another side having corresponding teeth.

167. (new) The device of claim 139, wherein the circuitry is comprised of double sided circuitry, one side having said teeth and another side having corresponding teeth.

168. (new) The device of claim 140, wherein the circuitry is comprised of double sided circuitry, one side having said teeth and another side having corresponding teeth.

169. (new) The device of claim 141, wherein the circuitry is comprised of double sided circuitry, one side having said teeth and another side having corresponding teeth.

170. (new) The device of claim 142, wherein the circuitry is comprised of double sided circuitry, one side having said teeth and another side having corresponding teeth.

171. (new) The device of claim 143, wherein the circuitry is comprised of double sided circuitry, one side having said teeth and another side having corresponding teeth.

172. (new) The device of claim 144, wherein the circuitry is comprised of double sided circuitry, one side having said teeth and another side having corresponding teeth.

173. (new) The device of claim 145, wherein the circuitry is comprised of double sided circuitry, one side having said teeth and another side having corresponding teeth.

174. (new) The device of claim 146, wherein the circuitry is comprised of double sided circuitry, one side having said teeth and another side having corresponding teeth.

175. (new) The device of claim 147, wherein the circuitry is comprised of double sided circuitry, one side having said teeth and another side having corresponding teeth.

176. (new) The device of claim 148, wherein the circuitry is comprised of double sided circuitry, one side having said teeth and another side having corresponding teeth.

177. (new) The device of claim 149, wherein the circuitry is comprised of double sided circuitry, one side having said teeth and another side having corresponding teeth.

178. (new) The device of claim 150, wherein the circuitry is comprised of double sided circuitry, one side having said teeth and another side having corresponding teeth.

179. (new) The device of claim 151, wherein the circuitry is comprised of double sided circuitry, one side having said teeth and another side having corresponding teeth.

180. A process of making the electrical device product of any one of claims 91, 97, 102, 108, 110, 115, 119, 120, 122, 125, 129, 134, or 136, the method including the step of:

forming means for joining by building up a conductive layer on a dielectric material surface remaining from removal of a portion of the dielectric material to form a portion of circuitry in the electrical device.